

How to Restructure the International Financial Architecture¹

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Executive Summary

- To lower the likelihood of financial crises:
 - Securitisation should be regulated to restore proper incentives for banks.
 - The euro area should adopt a regulatory system based on objectives.
 - The short-comings of the Basel II accord should be addressed.
 - While difficult, ways must be found to incentivise financial firms to change the way they compensate employees.
 - The euro area should have a single supervisor and regulator charged with ensuring financial stability.
- To prevent liquidity crises:
 - There should be good systems of deposit insurance.
 - Countries without important reserve currencies should not have large internationally exposed banking systems.
- To decrease the likelihood of exchange rate crises, the powers in Brussels and Frankfurt
 - should allow potential future members of the euro area to unilaterally adopt the euro without jeopardising their chances of future membership in the euro area.
 - should not enforce the exchange rate criterion of the Maastricht Treaty.
- Early warning of a financial crisis
 - is unlikely to be best provided by the IMF
 - might be provided by an independent committee of experts and individual market participants
- International cooperation in developing crisis management measures and disseminating this knowledge is desirable; funding these measures must be left to the national governments.
- Managing a crisis
 - Requires writing off bad assets: Central banks should learn how use auctions to value non-traded securities.
 - Requires short-term liquidity provision to and recapitalisation of viable financial firms: Countries should not have banking sectors that are too big to rescue.
 - International coordination to avoid beggar-thy-neighbour regulatory anpolicies and exchange rate policies.

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Restructuring the international financial architecture to safeguard the world against the ill effects of financial crises requires efforts in three areas. The first area is crisis prevention: appropriate supervision and regulation must be developed and implemented to lessen the risk of solvency crises. Strategies to protect market participants from liquidity crises should be in place. The second area is surveillance: it is desirable to have early warning of potential crises and an assessment of risks, weaknesses and vulnerabilities. The third area is crisis management: there should be policies to ensure that crises are mitigated and contained. The purpose of this note is to address each of these three aspects. I discuss which policies and reforms are feasible and which would make a significant contribution to global financial stability; I consider the appropriate roles for national and international institutions.

1. Crisis Prevention

Financial crises can occur when financial firms become insolvent or when solvent financial firms become illiquid. In the current crisis, both phenomena have occurred. In this section I discuss reforms that would lower the risk of solvency problems and reforms that would reduce the threat of liquidity problems. I also discuss measures to prevent speculative attacks on fixed exchange rates.

1.1 The prevention of solvency crises

Promoting a stable financial system requires both macroeconomic and microeconomic supervision and regulation. Typically, the central bank is charged with the macroeconomic tasks: acting as lender of last resort to illiquid but solvent financial institutions and ensuring the orderly functioning of financial markets. Traditional microeconomic tasks – imposing the minimum amounts of capital required, the minimum risk-based capital ratios, limits on portfolio investments and restrictions on off-balance sheet activities and then ensuring that these restrictions are complied with – have been allocated to various agencies, including the central bank, in ways that differ markedly across countries. Improving supervision and regulation to reduce the likelihood of future crises requires a two-pronged approach: first, the scale and scope of microeconomic prudential supervision and regulation must be expanded and secondly, microeconomic tasks should be reallocated, both within countries and internationally.

1.1.1 Reforms to supervision and regulation

I describe four obvious areas in which microeconomic supervision of the financial system must be reformed. In the first two, it is relatively clear what regulators ought to do; in the latter two, finding solutions is problematic.

The first area of necessary reform is securitisation. While allowing the diversification of idiosyncratic risk, securitisation perverts the incentives of commercial banks. Commercial banks exist as intermediaries between borrowers and lenders because they can mitigate asymmetric information problems in credit markets by collecting information about potential borrowers (thus reducing adverse selection problems) and by monitoring their behaviour (thus reducing moral hazard problems). A commercial bank that intends to securitise its loan portfolio has little incentive to either gather information about potential borrowers or to oversee the behaviour of borrowers once the loan is made. Regulatory reform need not eliminate securitisation,

but it must restore the proper central bank incentives. One way that this could be done is to insist that a commercial bank or other financial institution that securitises its loans retain some fraction of the subordinate, or riskiest, tranche.

The second area is the nature of the regulatory system. Many countries – such as the United States – have an *institutional* system of regulation. That is, supervision is organised according to types of financial institutions. In a world where the difference between types of financial institutions is diminishing this makes little sense and it has allowed some financial institutions to be lightly regulated, or in the case of hedge funds, to be not regulated at all. The solution to this is to have a regulatory system that is based instead upon objectives, such as financial stability, consumer protection and adequate competition.²

The third area is capital requirements. The Basel II accord sets out international standards for banking regulators seeking to reduce excessive risk taking by banks by imposing the amount of capital that banks are required to hold. It is widely believed that these capital requirements are pro-cyclical. During an economic downturn, banks' estimates of the likely losses on their loans rise and, under the Basel II rules this increases their required capital. As a result, their ability to make further loans is impaired and this worsens the downturn further.³ In addition, it is argued that the Basel II accord places an insufficient emphasis on liquidity management and too much reliance on internal risk management models and on ratings agencies.⁴ Satisfactory solutions to the inadequacies of Basel II are not obvious, but resources should be devoted to developing them.

The fourth area is employee compensation. Employee compensation in the financial services industry encourages excess risk taking by providing exorbitant reward for good short-term results without severe punishment for bad long-term results. A solution to this problem is urgently needed, but given the high degree of labour mobility in the industry, this is possibly the most conceptually difficult regulatory problem faced by policy makers responsible for financial stability.

1.1.2 *Changing who does what*

As mentioned in the previous section, the allocation of regulatory responsibility is best done by objective rather than by type of institution. The objective of financial stability has both macro-prudential and micro-prudential aspects. There is no consensus in the academic and policy debate on whether these tasks should both be done by the same agency and there is no uniformity in practice: in the United States the Federal Reserve is one of the regulators of commercial banks; in the United Kingdom regulation of the financial services industry is the responsibility of the Financial Services Authority rather than the Bank of England. In the Euro area, it may or may not be desirable for the ECB to supervise and regulate financial institutions, but there should be a single euro area supervisory and regulatory agency charged with promoting the stability of the euro area financial system. I present two reasons.

First, for the ECB to fulfil its lender of last resort function it must be able to distinguish solvent but illiquid institutions from insolvent institutions. The central bank and the regulatory authority need to be able to share information quickly. Thus,

² See Di Giorgio and Di Noia (2001) for a theoretical discussion of different types of regulatory frameworks.

³ See Repullo and Suarez (2008) for a discussion of this.

⁴ See Rubini (2008).

it appears that the area of jurisdiction of the monetary policy maker and that of a single supervisory and regulatory authority concerned with financial stability ought to coincide. The second reason is the prevalence of cross-border mergers of financial institutions within the euro area. The risks faced by a multinational financial group as a whole may differ substantially from the risks of the part of the group located within a particular country. This suggests that it is important for cross-border financial concerns to be regulated by a single authority.

The second argument applies to the entire global financial system, as well as to the euro area, and some have suggested that the Financial Stability Forum (FSF) should have the power to supervise large transnational financial institutions. Unfortunately, global financial supervision is less politically feasible than euro area financial supervision and may not be possible. There is a potentially important role for the FSF, however. A monolithic euro area financial regulator, unless well structured, is likely to be cumbersome and bureaucratic and, thus, not conducive to innovative thinking. It may also be more subject to “regulatory capture” as relations with a single regulator may be more direct.⁵ Thus, having an independent body to provide ideas and to assess the overseer is likely to be important.

1.2 The prevention of liquidity crises

While a good system of supervision and regulation may help prevent solvency crises based on poor fundamentals, it may not be sufficient to prevent liquidity crises. In this section I consider how the likelihood of bad outcomes associated with good fundamentals can be reduced.

2.1.1 Preventing old-style and new-style bank runs

Even when the fundamentals are good, financial markets can exhibit unfortunate outcomes due to coordination failures and participants’ inability to aggregate information properly. To see how coordination failures can arise, imagine a bank with uninsured or underinsured depositors. If each such depositor believes that all other such depositors will keep their funds in the bank and that will be sufficient to prevent the bank from failing, then each such depositor finds it optimal to keep his money in the bank and the bank does not fail. However, if each such depositor believes that all other such depositors will withdraw their funds and that this will be sufficient to cause the bank to fail, then each such depositor withdraws his funds and the bank fails. In each case, depositors’ expectations are self-fulfilling and rational. Both scenarios can be consistent with the same set of fundamentals. Thus, either outcome is possible: the bank fails or it does not.

Poor information aggregation can also cause banks to fail. Imagine that a few depositors hear a rumour that a bank might be in trouble and withdraw their funds. Other depositors, seeing this, withdraw their deposits, not because they have heard anything negative about the bank, but because of what they infer the other depositors must have known to have withdrawn their deposits. A cascade of withdrawals may result, based solely upon a small amount of noisy information embodied in the rumours heard by the few initial withdrawers.

In addition to causing old-style bank runs, the coordination failures and information cascades can cause new-style runs: wholesale creditors of a bank may fail

⁵ See Di Giorgio and Di Noia (2001).

to roll over their loans or to extend new loans because they believe that other creditors are going to fail to roll over their loans and that as a consequence the bank will fail and be unable to repay. A small amount of poor information about a bank may also lead to a cascade of wholesale funding being withdrawn.

A good international financial architecture should be able to minimise bank runs. Most old-style bank runs, where uninsured depositors flee, can be prevented by a system of deposit insurance where depositors have immediate access to their funds in the event of a bank failure. Runs on banks by wholesale creditors can be prevented if there is a lender of last resort with deep enough pockets and it is credible that this lender will make the needed loans.

As long as its banks' deposits and short-term liabilities *are denominated in domestic currency*, a government can always issue enough currency to avert a bank run. If the government is credible that it will do this, the run is likely to be averted. If a run occurs and the bank is fundamentally sound, it repays its loan and there is no consequent inflation. However, if banks' deposits and liabilities are denominated in foreign currency, the country must be able to come up with enough foreign exchange to avert a run. As the recent experience of Iceland illustrates, if a country's banking system is sizable enough, this may not be feasible.

The problems of funding provision and credibility suggest two lessons. First, it is highly undesirable for a small country with its own currency to have a large, internationally exposed banking sector. The fate of Iceland provides a stark warning and Switzerland, Denmark, Sweden and even, to some extent, the UK should pay attention to this. From the point of view of a healthy international financial architecture, all of these countries would be better off in the euro area.

1.2.2 Preventing speculative attacks on currency pegs

As with bank runs, speculative attacks on fixed exchange rates may occur even when the fundamentals are good. Investors may attack a fixed exchange rate regime because they believe that other investors are going to attack and that this will cause the peg to fail. Their expectations are self-fulfilling. A small amount of negative information may lead to an information cascade that results in a successful attack. Unfortunately, it is generally more difficult to avert a speculative attack on a fixed exchange rate than it is to ward off a bank run. In addition, a forced devaluation may lead to a bank solvency crisis if it causes domestic banks to be unable to repay their foreign-currency loans.

It is always *feasible* for a central bank to fend off a speculative attack on a pegged exchange rate. All it has to do is set overnight interest rates high enough to achieve the necessary contraction of domestic credit. An attack will not occur if it is credible that a country is prepared to mount a successful defence. Unfortunately, in practice, defending a pegged exchange rate is quite costly.⁶ A confidently expected 20 percent devaluation of the currency requires a 20 percent overnight interest rate (at a daily rate) to discourage speculators. During the ERM crisis of 1992-3, the central banks of Sweden and Ireland only temporarily staved off devaluation by setting their overnight interest rates at 500 percent and 300 percent (at an annual rate), respectively.⁷ Thus, while averting an attack on a pegged exchange rate is *possible*,

⁶ See Rogoff and Obstfeld (1995).

⁷ See Buiter et al (1998).

the damaging effect of high interest rates ensures that it is unlikely to be credible that a country will choose to do so.

This credibility problem suggests that a feature of a sound international architecture is that large economies should avoid fixed exchange rates.⁸ Unfortunately for small open economies, a floating exchange rate may be better than a fixed exchange rate but is still an unattractive option. Such an economy is highly vulnerable to external shocks that cause wide swings in its exchange rate that make it difficult to use monetary policy to attain price stability, that can cause real damage to the domestic economy and that can threaten the banking sector if an unexpected devaluation makes it difficult to repay foreign-currency loans. As a consequence of this, small open economies should not have their own currency.

The arguments suggest that the criteria for entrance into the euro area contribute to financial instability and have no place in a sound financial architecture. Most candidate and potential candidate countries for membership into the euro area are too small to have their own currency and would be better off unilaterally adopting the euro. Although nothing in the Maastricht Treaty specifically excludes this, these countries are likely deterred from doing it because they fear it might preclude eventual membership in the euro area and, thus, access to the ECB as lender of last resort. The ECB, Brussels and the Council should decide and make it clear that unilaterally adopting the euro will not jeopardise membership chances. If countries must or wish to keep their own currencies prior to adopting the euro, the ECB, Brussels and the Council should decide and should make it clear that the exchange rate criterion will not be applied rigidly. Italy and Germany did not meet the fiscal criteria when they joined; Greece met the criteria by fudging its data; Italy, Finland and Greece did not meet the exchange rate criterion. Current candidates should not have to subject themselves to the possibility of a damaging exchange rate crisis to become euro area members.

1.2.3 *An international lender of last resort*

An international lender of last resort may seem like an appealing reform measure, but it has never proved feasible in practice. The reason is that distinguishing solvent but liquid borrowers from insolvent borrowers is difficult, particularly if the lender of last resort is not also (or does not also have a close relationship with) the supervisor and regulator of a financial institution in need of a loan. If a loan is made to a financial institution that turns out to be insolvent and cannot repay, then the tax payers of the countries who fund the international lender of last resort must pay. To fund an international lender of last resort requires deep pockets and a willingness to transfer money from tax payers in one country to the creditors of a defaulting financial institution in another country when an *ex post* incorrect decision is made.

The IMF has not been especially successful at playing the role of lender of last resort. Traditional IMF loans, with conditionality and funds disbursed in tranches, are not suited to a liquidity crisis. Recently, however, the IMF has expanded its limited role as international lender of last resort (to countries, rather than to specific financial institutions) by introducing a short-term lending facility (SLF). The purpose of this facility is to provide large amounts of short-term financing to fundamentally sound

⁸ A country might try to gain credibility by having a currency board. If the rules of this pegged exchange rate arrangement are strictly adhered to, the central bank has enough foreign reserves to defend its peg by buying back its monetary base. Unfortunately, as the Argentinian disaster of 2001 demonstrates, domestic concerns make adherence to the rules difficult.

countries that have temporary liquidity problems in their financial markets. Countries will be allowed to borrow up to 500 percent of their quota for three months, and can renew the loan twice in 12 months. Unfortunately, while welcome, this is not adequate to save many countries with full-blown crises. If such a facility had existed last September, it would have provided Iceland with roughly \$900 million, a small fraction of the \$10 billion Iceland may have needed to stave off collapse of its banking system.⁹ It would currently provide Mexico with about \$24 billion; in 1994 Mexico spent \$25 billion in reserves and borrowed \$25 billion more in an unsuccessful attempt to defend the peso.¹⁰ Moreover, with loanable funds of about \$200 billion (at the end of August 2008) the IMF's resources are severely limited.

2. Crisis Warning

The second aspect of restructuring the international financial architecture is improved crisis warning. Financial crises usually take markets by surprise. There were few high-profile observers issuing loud warnings of either the apparent liquidity crisis that erupted in August 2007 or the solvency crisis that surfaced in 2008. Similarly, markets were startled by the emergence of the international debt crisis in August 1982, the Mexican crisis of 1994 and the Asian crisis of 1997.

Some crises, especially financial account crises, can be extraordinarily difficult to predict. Empirical researchers have had little success in isolating useful sets of leading indicators to predict speculative attacks.¹¹ One reason for this is that speculative attacks – as described in the previous section -- can be one outcome in a scenario where multiple outcomes are possible; thus, the same set of fundamentals can be consistent with a speculative attack occurring or not occurring. Other crises, however, seem rooted in the fundamentals and are not merely coordination failures or a result of improper information aggregation; the recent financial crisis appears to be an example. With the benefit of hindsight, it seems that it ought to have been possible to have foreseen that the combination of a sharp decline in US house prices, rampant securitisation, high leverage and inadequate accounting standards might lead to a solvency crisis of the magnitude we are seeing. But, few if any, seemed to see it.

2.1 *The IMF as provider of early warnings*

While reliably foreseeing all crises in time to forestall them may be an impossible goal, better prediction seems possible. An early warning system is a reform measure which would contribute to an improved financial architecture and which may be feasible, as well as relatively inexpensive. Some have suggested that the IMF is the natural institution to provide such a service.

The IMF itself sees surveillance as one of its primary roles. In their joint letter to finance ministers and central bank governors, the IMF and the Financial Stability Forum state that, "Surveillance of the global financial system is the responsibility of the IMF." However, while the IMF has considerable expertise in evaluating macroeconomic policy, its institutional structure – as well as its past performance -- suggests that is not the right institution to provide early warning of impending financial crises.

⁹ See Buitert and Sibert (2008).

¹⁰ Rogoff and Obstfeld (1995)

¹¹ See Chamon et al (2007) for a recent attempt and a discussion of the literature.

The IMF is intensely bureaucratic. Its culture may result in staff who are socialised to think in a particular way. To see a looming crisis before others typically requires thinking in a highly independent and unconventional way. In addition, the IMF is an exceedingly political organisation; to argue one's unusual and possibly sensitive view may not be a career-enhancing move for a staff member. Finally, while the IMF has the expertise to analyse financial account crises, its emphasis on macroeconomics may mean that it does not have the expertise to predict financial sector crises based on microeconomic failures. The objections raised to the IMF as provider of early warnings apply to a great extent to other international organisations and central banks.

2.2 An alternative proposal

Research economists outside of large bureaucratic and political organisations do not face the same negative incentives that the IMF staff do; indeed, they may be rewarded for advocating unusual views. But, they too cannot be relied upon to provide a warning. There are two reasons for this. First, most researchers have little incentive to worry about international financial crises, preferring to do publishable research or to think about some other topic. The second is that, until the recent crisis hit, the percentage of research economists who knew what a collateralized debt obligation was, was minute: most research economists lacked the institutional knowledge to understand what was taking place.

I propose that as an alternative, an early warning system should be provided by an independent body of experts who are required to provide reports of weaknesses in the financial system. This body should consist of eminent research economists – both macroeconomists and microeconomists, as well as finance theorists, research accountants and practitioners in the financial sector. The last group would provide the relevant practical expertise. Terms on this committee should be short, to maintain independence of thought and to discourage group think. Pay and prestige should be sufficient to recruit the most talented thinkers and reports should be widely published so that members are accountable and have an incentive to care about their reputations.

3. Crisis Management

There is widespread agreement that managing a local solvency crisis requires three things: first, bad assets should be removed from financial institutions' balance sheets; second, viable financial institutions should be recapitalised; third, short-run liquidity needs should be addressed.¹² Managing a global financial crisis requires an additional component: nations must coordinate to ensure that the crisis does not propagate.

The removal of bad assets from balance sheets requires first a mechanism for valuing assets. Economists are good at devising auctions. Central banks should begin hiring people with the appropriate expertise and start experimenting. A difficulty is that there is a tradeoff: firesale prices worsen the problem; too generous prices are a transfer from tax payers to possibly delinquent financial institutions.

International organisations can help provide technical expertise, but because of the political aspect and because the government may have to purchase some or all of

¹² See, for example, Strauss-Kahn, D., Speech at the Banco de España, Madrid, Spain, 15 Dec. 2008.

the assets, national central banks in the main financial centres should probably implement the auction with national treasuries buying the assets if necessary.

The IMF can provide loans for recapitalisation and short-term liquidity needs to some small countries with large banking sectors. An IMF Stand-By Arrangement is currently providing Hungary with over \$15 billion. However, the IMF does not have deep enough pockets to do anything but render technical assistance to large countries. National treasuries, financed by their tax payers must borrow to finance this refunding. Countries should be discouraged from having banking systems that they are too small to recapitalise. Along with recapitalisation, there should be schemes in place to temporarily protect financial institutions from their creditors and to reorganise them. There should be rules about who should bear the cost and risk of recapitalisation.

The Great Depression of the 1930s was made worse by competitive devaluations and tariffs. The current crisis saw a round of enhancements of deposit insurance; it is likely that some of the motivation was to compete for funds. In a global financial crisis international coordination is necessary to ensure that beggerthy-neighbour policies do not worsen matters. The IMF can play a role in this by promoting cooperation.

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